APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,719	01/17/2002	Satoshi Hasegawa	M2082.0000/P000	3594

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EXAMINER
HARPER, V PAUL

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*14 November 2005*</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>*1-24*</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>*1-24*</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   Claims 1-9, 13, 14, and 16-21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over ISO/IEC 11172-3 (as described in the prior art section of the

specification, p. 2, Fig. 1 labeled prior art), hereinafter referred to as *Spec_Prior_Art*, in

view of Nakajima et al. ("A Fast Audio Classification from MPEG Coded Data" ICASSP

'99, vol. 6, May 1999) hereinafter referred to as Nakajima.

        Regarding **claim 1**, *Spec_Prior_Art* describes the MPEG1/Audio layer 1 system

and includes the following:

• a subband dividing section dividing inputted audio information including a sound

signal into a plurality of frequency bands (p. 2, line 15, Fig. 1, item 111);

• a scaling section calculating a scaling factor, which indicates a multiplying power

to a reference value, of each subband divided by the subband dividing section into

each of the frequency bands, and aligning each dynamic range (Fig. 1, item 112); and

• a coding processing section compressing and coding an output signal from the

scaling section by using a MPEG system to output as coded bit stream data (Fig. 1,

items 113-115).

        But *Spec_Prior_Art* does not specifically teach "further including a feature

detection processing section extracting features of the audio information on the basis of

the scaling factors outputted from the scaling section." However, the examiner contends

that this concept was well known in the art, as taught by Nakajima.

In the same field of endeavor, Nakajima teaches a method for audio classification

from MPEG coded data, by processing the sub-band energy levels (§2, the scaling

factors necessarily correspond to sub-band energy levels).

Therefore, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify *Spec_Prior_Art* by specifically providing the

features, as taught by Nakajima, because it is well known in the art at the time of

invention for the purpose of identifying the content of the audio signal being processed

for marketing, monitoring commercials, improved speech recognition (Kenyon et al. U.S.

Patent 4,843,562, col. 1), and indexing, browsing, and retrievals from multimedia

databases (Nakajima, §1, ¶1).

Regarding **claim 2**, *Spec_Prior_Art* in view of Nakajima teaches everything

claimed, as applied above (see claim 1). In addition Nakajima teaches "the feature

detection processing section includes a means of determining whether or not the audio

information is of a voice signal interval on the basis of the scaling factors" (§1, ¶4,

classified into speech; §2.2, "Music/Speech Characteristics" based on the distribution

of energy; Fig. 1 and 2, n.b., the amplitude of each histogram corresponds to a sub-

band level).

Regarding **claim 3**, *Spec_Prior_Art* in view of Nakajima teaches everything

claimed, as applied above (see claim 1). In addition, Nakajima teaches "wherein the

feature detection processing section includes a means of determining whether or not

the audio information is of a soundless signal interval on the basis of the scaling

factors" (§2.1, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 4**, this claim has corresponding limitations similar to the

limitations in claim 1, and those limitations are rejected for the same reasons. In

addition: "a signal level calculating section inputting thereto the scaling factor of each

subband outputted from the scaling section, and calculating a signal level

corresponding to the scaling factor; wherein the feature detection processing section

extracts features of the audio information on the basis of the signal levels calculated by

the signal level calculating section" (§2, "Classification Algorithm" Figs. 1 and 2; the

amplitude of each histogram corresponds to a scaled sub-band level where this

information is used during feature detection).

Regarding **claim 5**, *Spec_Prior_Art* in view of Nakajima teaches everything

claimed, as applied above (see claim 4). In addition, Nakajima teaches:

• the signal level calculating section inputs thereto the scaling factors in low-

frequency bands outputted from the scaling section within a predetermined period of

time to calculate the signal levels (§2, "Classification Algorithm" ; §2.1, ¶'s 1 and 2, low

frequency; over segment implies a predetermined interval); and

• the feature detection processing section comprises: a calculating means of

finding a maximum value and a minimum value of the signal levels calculated by the

signal level calculating section (§2, certain level of variation; requires the determination

of min/max--range), and

- calculating a difference between the maximum value and the minimum value (§2,

variation); and

- a determining means of, when the difference value calculated by the calculating

means is greater than or equal to a predetermined threshold value, determining that

the audio information is of a voice signal interval, on the other hand, when the

difference value is less than the threshold value, determining that the audio information

is of a signal interval except for voice (§2, silence, if σ^2 is smaller than the

predetermined threshold, otherwise the audio information is evaluated for speech, etc).

Regarding **claim 6**, *Spec_Prior_Art* in view of Nakajima teaches everything

claimed, as applied above (see claim 4). In addition, Nakajima teaches:

- the signal level calculating section inputs thereto all of the scaling factors

outputted from the scaling section within a predetermined period of time to calculate

the signal levels (§1, from MPEG coded data; see Figs, 1 and 2); and

- the feature detection processing section includes a determining means of, when

the signal levels calculated by the signal level calculating section are greater than or

equal to a predetermined threshold value (§2, silence if σ^2 is smaller than the

predetermined threshold, otherwise the audio information is evaluated for speech, etc),

- determining that the audio information is of a sound signal interval (§2.2

"Music/Speech Characteristics", not silence),

- on the other hand, when the signal levels are less than the threshold value, determining that the audio information is of a soundless signal interval (§2, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 7**, this claim has limitations similar to claim 1 and is rejected for the same reasons.

Regarding **claim 8**, this claim has limitations similar to claim 2 and is rejected for the same reasons.

Regarding **claim 9**, this claim has limitations similar to claim 3 and is rejected for the same reasons.

Regarding **claim 13**, this claim has limitations similar to claim 1 and is rejected for the same reasons.

Regarding **claim 14**, this claim has limitations similar to claim 2 and is rejected for the same reasons.

Regarding **claim 16**, this claim has limitations similar to claim 4 and is rejected for the same reasons.

Regarding **claim 17**, this claim has limitations similar to claim 5 and is rejected

for the same reasons.

Regarding **claim 18**, this claim has limitations similar to claim 6 and is rejected

for the same reasons.

Regarding **claim 19**, this claim has limitations similar to claim 7 and is rejected

for the same reasons.

Regarding **claim 20**, this claim has limitations similar to claim 8 and is rejected

for the same reasons.

Regarding **claim 21**, this claim has limitations similar to claim 9 and is rejected

for the same reasons.

2.   Claims 10-12, 15, and 22-24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over *Spec_Prior_Art* in view of Nakajima and well known prior art (MPEP

2144.03).

Regarding **claim 10**, *Spec_Prior_Art* describes the encoding portion of ISO/IEC

11172-3, but does not specifically describe "a stream dividing section, after inputting

thereto bit stream data coded by a MPEG system, dividing the coded bit stream data

composed of each subband divided into each frequency band into bit assigning information, scaling factor value indicating a multiplying power to a reference value, and coded data in units of each subband; and a decoding processing section executing a decoding process to the coded data divided by the stream dividing section in units of each subband to output as audio information." However, the examiner takes official notice of the fact that the use of a decoder for the purpose of decoding data encoded according to ISO/IEC 11172-3 was well known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify *Spec_Prior_Art* such that a decoder is implemented, because a decoder is part of the ISO/IEC 11172-3 specification and required for the complete processing of the signal.

In addition, *Spec_Prior_Art* does not specifically teach:

- a feature detection processing section extracting features of the audio information on the basis of the scaling factor values outputted from the stream dividing section; and

- a signal level calculating section inputting thereto the scaling factor of each subband outputted from the stream dividing section to calculate a signal level;

- wherein the feature detection processing section extracts features of the audio information on the basis of the signal levels calculated by the signal level calculating section.

However, the examiner contends that these concepts were well known in the art, as taught by Nakajima.

In the same field of endeavor, Nakajima teaches a method for audio classification from MPEG coded data, where Nakajima processes the sub-band energy levels (§2, where the scaling factors necessarily correspond to sub-band energy levels since Nakajima is processing sub-band energy levels) and performs classification (§2, silence, speech, etc.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify *Spec_Prior_Art* by specifically providing the features, as taught by Nakajima, because it is well known in the art at the time of invention for the purpose of identifying the content of the audio signal being processed for marketing, monitoring commercials, improved speech recognition (Kenyon et al. U.S. Patent 4,843,562, col. 1), and indexing, browsing, and retrievals from multimedia databases (Nakajima, §1, ¶1).

Regarding **claim 11**, *Spec_Prior_Art* in view of Nakajima and well known prior art teaches everything claimed, as applied above (see claim 10). In addition, Nakajima further teaches :

- the signal level calculating section inputs thereto the scaling factors in low-frequency bands outputted from the stream dividing section within a predetermined period of time to calculate the signal levels (§2, "Classification Algorithm" most of the sub-band energy is confined to the lower sub-bands and variations are compared); and

- the feature detection processing section comprises: a calculating means of finding a maximum value and a minimum value of the signal levels calculated by the signal level calculating section (§2, variation is determined), and

- calculating a difference between the maximum value and the minimum value (§2, variation is determined with a necessary calculation of min/max difference); and

- a determining means of, when the difference value calculated by the calculating means is greater than or equal to a predetermined threshold value, determining that the audio information is of a voice signal interval, on the other hand, when the difference value is less than the threshold value, determining that the audio information is of a signal (§2.1, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 12**, *Spec_Prior_Art* in view of Nakajima and well known prior art teaches everything claimed, as applied above (see claim 10). In addition, Nakajima further teaches:

- the signal level calculating section inputs thereto all of the scaling factors outputted from the stream dividing section within a predetermined period of time to calculate the signal levels (§2, time and frequency analysis, frames in one second); and

- the feature detection processing section includes a determining means of, when the signal levels calculated by the signal level calculating section are greater than or equal to a predetermined threshold value (§2.1, silence if σ^2 is smaller than the predetermined threshold);

- determining that the audio information is of a sound signal interval (§2, §2.1,

"Silence Segment Detection" if not silence necessarily "sound"),

determining that the audio information is of a sound signal interval, on the other

hand, when the signal levels are less than the threshold value, determining that the

audio information is of a soundless signal interval (§2.1, silence, if σ^2 is smaller than the

predetermined threshold).

Regarding **claim 15**, this claim has limitations similar to claim 3 and is rejected

for the same reasons.

Regarding **claim 22**, this claim has limitations similar to claim 10 and is rejected

for the same reasons.

Regarding **claim 23**, this claim has limitations similar to claim 11 and is rejected

for the same reasons.

Regarding **claim 24**, this claim has limitations similar to claim 12 and is rejected

for the same reasons.

Citation of Pertinent Art

3.   The following prior art made of record but not relied upon is considered pertinent

to the applicant's disclosure:

- Zick et al. (U.S. Patent 6,370,504) disclose an invention that performs speech

recognition on MPG/Audio encoded files.

- Patel et al. ("Audio Characterization for Video Indexing" SPIE, 1996, pp. 373-

384) teaches audio feature extraction from an MPEG encoded audio stream.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to V. Paul Harper whose telephone number is (571) 272-

7605. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

12/29/2005

V. Paul Harper
Patent Examiner
Art Unit 2654